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## Sand Flies in Iraq and Afghanistan may cause leishmaniasis

Heidelberg, Germany – The sand flies in Iraq and Afghanistan are tiny, annoying and not much bigger than a gnat. Soldiers may not even notice them. Sand flies are almost impossible to avoid and can carry the parasite known as leishmania. Bites can result in small, itchy bumps that form scabs or open sores known as cutaneous leishmanaisis – a term becoming familiar to Soldiers deployed in support of Operations Enduring and Iraqi Freedom.

Most leishmaniasis cases among US Soldiers have come out of the rural areas in the eastern and northern areas of Iraq, said Col. Kent Bradley, preventive medicine consultant, Europe Regional Medical Command, so Soldiers deployed with V Corps' 1<sup>st</sup> Armored Division and the V Corps Headquarters to urban areas saw only a few cases. Currently, only four cases of cutaneous leishmaniasis have been confirmed among U.S. Army Europe Soldiers. He indicated that more cases could be seen here in Europe as operations continue and Soldiers move through more high risk areas, and that Soldiers and their families should have know how to prevent the condition as well as how to recognize the symptoms.

"Cutaneous leishmanaisis is not contagious from person to person, fatal or painful, nor is it 100 percent preventable," said Bradley. "However, deployed Soldiers should do all they can to minimize risks, since it can cause discomfort and scarring. The best method of prevention is for Soldiers to protect themselves from being bitten by the sand fly. BDUs or DCUs properly worn and treated with Permethrin are very effective. Additionally, the uniform does not cover all of the skin, so any exposed skin should be covered with lotion containing DEET and sleeping areas should have screens or mosquito nets that have been sprayed with Permethrin. These are the optimal means to prevent sand fly bites."

Bradley added that sand flies tend to come out at night, so Soldiers are more likely to be bitten between dusk and dawn, and that the peak season for transmission of leishmaniasis in Iraq is April through October.

"The military medical community has worked to ensure Soldiers are aware of the precautions necessary to prevent the contraction of leishmaniasis," he said. "This type of information is included in the pre-deployment health briefing given to units and individual Soldiers prior to deploying. Additionally, several messages about this infection have gone out to units in Iraq and Soldiers are given an information card specifically about leishmaniasis."

Bradley said the leishmaniasis infection becomes evident two to eight weeks after the initial bite by the sand fly, but it could be much longer. "Cutaneous leishmaniasis most frequently shows up on the exposed parts of the body, such as the hands, arms, neck and face, and usually begins as a small bump on the skin known as a papule, which is often itchy. It may persist in this form for a while and continue on to form a small scab or open sore," he said. "These lesions do not heal quickly and left untreated, most -- about 90 percent -- of these type lesions will heal on their own. This may take a very long time, from 6 to 18 months and the longer the time the larger the scar."

Bradley said treatment for cutaneous leishmaniasis is available in the United States and involves the use of a medicine called pentostam (sodium stibogluconate) which is taken daily for 10 to 20 days. Currently the only U.S. military treatment facility providing this therapy is Walter Reed Army Medical Center in Washington, D.C. Topical heat has also been used and as an alternative treatment. Germany's Landstuhl Regional Medical Center recently received the device used to provide this type of therapy.

"There are three types of leishmaniasis – cutaneous, mucocutaneous and visceral," he said. "Leishmaniasis is actually a group of infections of the skin, mucous membranes, or internal organs. Cutaneous leishmaniasis refers to the infection of the skin and is by far the most predominant type of infection we have seen from Iraq. The term mucocutaneous leishmaniasis refers to an infection involving mucus membranes like your nose or mouth and is only found in South America. Finally, visceral leishmaniasis refers to an infection involving internal organs. Although present in Iraq and Kuwait, less than 1 percent of all cases of leishmaniasis in U.S. and coalition Soldiers have had this type of leishmaniasis. Visceral and cutaneous leishmaniasis are found in Central and South America, Africa, parts of Europe, Southwest and Southeast Asia."

He added that visceral leishmaniasis is a much more serious disease and has an average incubation period of two to six months. Most often the person will have a gradual onset of occasional or intermittent fever, progressive enlargement of their spleen and liver and some vague abdominal discomfort. The sufferer may notice a decrease in weight, and develop diarrhea and a cough. Occasionally the initial symptoms will include an abrupt onset of fever, chills and overall malaise. Anemia is almost always present and liver enzymes will often be mildly elevated. Besides Iraq, visceral leishmaniasis is also endemic in the Mediterranean region, and family members of U.S. servicemembers have been infected in Spain and southern Italy.

Bradley explained that cutaneous leishmaniasis is diagnosed through a skin biopsy or scraping of the lesion. The specimen can be touched to a microscope slide to look for the presence of the parasite. This test can be conducted in Europe, but those tests are then confirmed at Walter Reed Army Institute of Research and the Armed Forces Institute of Pathology. Visceral leishmaniasis can be detected with a special test from a blood sample.

Bradley said deployed Soldiers diagnosed with visceral leishmaniasis will be medically evacuated from their deployed areas, and those diagnosed with cutaneous leishmaniasis would be considered for medical evacuation, especially if the lesions are large, multiple, or involve the face or joints. Soldiers who complete treatment for cutaneous leishmaniasis are deployable and may, in fact, return to their unit at its deployed location.

"In the military medical community, part of our mission is keeping Soldiers healthy while they are deployed," Bradley said. "By adhering to a few simple preventive measures Soldiers can greatly minimize their risk of becoming infected with leishmaniasis. However, Soldiers who have a non-healing lesion or ulcer on their skin for more than three weeks or those with persistent intermittent fever and headaches should consult their health care provider for biopsies or blood tests."